

*primacvum* which Newberry originally described as *Leguminosites Marcouanus*.

EXPLANATION OF FIGURES

Fig. 1, basilar-lobed leaf of *Liriodendron Tulipifera* L. ; Fig. 2, flower and leaf of *Michelia fuscata* (Andr.) Hance (from Prantl, after Baillon) ; Fig. 3, anomalous leaf of *Magnolia Virginiana* L. ; Fig. 4, fossil *Liriodendron* stipules (after Heer).

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THE DISTRIBUTION OF *FUCUS SERRATUS*  
IN AMERICA

BY C. B. ROBINSON

The serrated rockweed, *Fucus serratus* L., has long been known to occur in abundance at Pictou, Nova Scotia, where it was first collected by Professor Fowler. Outside of this general locality it has never been found growing in America (if we except a very doubtful report from Newburyport, Mass.), and until lately its distribution was thought to be local, only two additional stations being recorded, Pirate Harbor, on the Strait of Canso, by Professor Macoun, and Pictou Island by Dr. A. H. Mackay.

Specimens brought from Broad Cove, Inverness, last summer, by Miss E. J. Fraser, extended the range some sixty miles to the northeast of the Strait, along the western side of Cape Breton, while others gathered at Pugwash early this spring by R. M. Benvie, removed the other boundary a like distance to the west of Pictou along the southern shores of Northumberland Strait.

These finds caused a systematic search to be undertaken along the entire coast of the Maritime Provinces, almost every important point upon the Gulf being explored, and in several cases the shores followed on foot for considerable distances. Much additional information has been obtained, which may be summarized as follows :

Although this rockweed is very common in all parts of Pugwash Harbor, no one has yet been able to find it farther west,

hence this appears to be its limit in that direction, and there is no reason to believe that it grows anywhere in New Brunswick.

East of Pugwash it is abundant at all points where any attempt has been made to find it, as far as Eastern Harbor on the west side of Cape Breton, a distance of over two hundred and fifty miles, following the coast. Its favorite habitat is a little below low-water mark, and being chiefly loosened by the heavier storms, it is driven by them high up on the beach, and in such profusion that especially in early spring it forms a nearly perfect belt often extending for miles. Throughout a tramp taken by the writer last March over twenty-five miles of coast around Cape John, it was never missed for more than a few yards, except at some exposed points, and similar expeditions elsewhere later in the season have had like results. It seems to be everywhere on the shores of Pictou County, except the heads of the harbors, and continues in equal abundance to the Strait of Canso, having been collected at Arisaig, Malignant Cove, Cape George and Linwood, all in Antigonish County, by Misses Chisholm, McKinnon, MacEachren and McLean, and subsequently by the writer at several intervening coves. It grows freely at Mulgrave also, but has not been traced beyond Professor Macoun's station at Pirate Harbor. It could not be found at Canso. On the eastern side of the Strait, only drift specimens were seen at Point Tupper and Port Hawkesbury, but only a short distance north of the latter it resumes its former abundance and maintains this at least as far as Broad Cove, and is reported at Eastern Harbor, thirty miles beyond, as still the commonest of all sea weeds. The observer, Thomas Gallant, adds the interesting fact that it has only become thus plentiful in recent years, that it formerly was quite rare.

There is indeed every likelihood that it is gradually extending its range, though the above is as yet the only actual observation on this point. Moreover, in many of those parts of Prince Edward Island where it is not found, the conditions appear to be highly favorable to its growth, and if so it may be expected to appear there at some future date. It may even be possible that it has been introduced from Europe in ballast, perhaps a century

ago, and has been gradually extending its range ever since, until it is now easily first among the marine plants of the district.

The only part of Prince Edward Island where it has yet been found is the extreme southeast, in the neighborhood of Murray Harbor and Cape Bear. It was first collected there in April, by J. Harper Prowse, but although as abundant as elsewhere, it remains so for only a few miles, and then gradually disappears. A solitary drifted specimen, half buried in sand, was found at the Wood Islands, fifteen miles to the west, but it seems not to grow there, and may possibly have drifted from the opposite shores of Nova Scotia. The farmers near Cape Bear gather the seaweeds driven ashore into so-called kelp beds for use as fertilizer. *Laminaria* is however only an occasional constituent, this rockweed forming at least three fourths of the whole.

On the twelve miles of coast bounding Pictou Island it is nowhere wanting.

While it has been alleged to grow at two or three points on the Atlantic coast of Nova Scotia, every report definite enough to be investigated has been shown to be without foundation, and at present there is every reason to believe that it is confined to the warmer waters of the Gulf. There its profusion is remarkable in view of its total absence elsewhere. Its only rivals are two other rockweeds, *Fucus vesiculosus* and *Ascophyllum nodosum*, and it is not only a more showy plant than either of these, but in the number of individuals exceeds them together.

NEW YORK BOTANICAL GARDEN.

## A KEY TO THE NORTH AMERICAN SPECIES OF GALERA

BY F. S. EARLE

### KEY TO THE SECTIONS

- |                                                               |              |
|---------------------------------------------------------------|--------------|
| 1. Universal veil none, or very fugacious.                    | 2.           |
| Universal veil subsistent as fibrils on the margin and stipe. | ERIODERMAE.  |
| 2. Pileus plicate-striate.                                    | PLICATELLAE. |
| Pileus often striate but not plicate.                         | 3.           |